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Conference Paper

Constructive-semantic Characteristics of Mother's Speech as a Factor of Child's Speech Development

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Abstract

Important characteristics of normal mental development of a child are the characteristics of his speech, vocabulary, mastery of grammatical constructions. According to the peculiarities of speech, one can judge the ability of a person to reflect not only the external, perceived properties of objects, but also internal, significant correlations and relationships. In our work, we call these properties constructive and semantic characteristics of speech. The child's speech develops only in interaction with the people around him, the main figure of which is the mother. The aim of the study was to determine how the constructive and semantic characteristics of the mother's speech influence the development of the child's speech, vocabulary and speech activity. The study involved 30 children aged 6.5–7.5 years and their mothers. For diagnostics, the subtest 'Dictionary' of the WISC test was used. The traditional method of determining the level of speech development was supplemented by indicators of constructive-semantic characteristics (speech activity, propensity to use different speech structures associated with speech development levels, use of each of the four types of constructions in accordance with the stages of verbal development). Significant connections between individual indicators of the speech of the child and his mother were revealed. Relations allow us to talk about the constructive and semantic characteristics of adult speech as a factor in the development of the child's speech. The study made it possible to reveal the mechanism of the implicit formation of concepts in the child by generalizing a large number of situational descriptions and features perceived from verbal judgments of the mother. Speech activity of children decreases in the conditions of primary use by the mother of speech structures 'action with the object', 'functional purpose of the objects'. The results obtained make it possible to consider the constructive-semantic characteristics of maternal speech as a factor of the zone of the nearest development of the child's speech.

Keywords: speech development, factors of speech development, speech activity, zone of proximal development, speech behavior as a joint action, constructive-semantic characteristics of speech, levels of speech development

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Received: 25 July 2018
Accepted: 9 August 2018
Published: 1 November 2018

Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the Fifth International Luria Memorial Congress Conference Committee.

1. Introduction

Speech occupies a key place in the system of higher mental functions of man, is the main mechanism of his thinking and conscious activity. The first peak of psychological research of speech, its types, factors of its development falls at the beginning of the last century and is reflected in the writings of J. Piaget [1], L.S. Vygotsky [2], A.R. Luria [3].

J. Piaget singled out the existence of egocentric speech, defined the main stages of its development in ontogenesis [1]. In the cultural–historical theory of L.S. Vygotsky, the role of the main factor triggering a volitional act is assigned to speech. Communication with an adult defines the child's development as a 'zone of proximal development', which ensures the emergence of the child's abilities in the intrapsychic form with subsequent internalization [2]. The child's speech reflects his ability to understand not only the external, perceived properties of objects, but also internal, essential, connections and relationships. In accordance with this, the child's speech development is considered as development of speech constructs reflecting internal connections: (1) a verbal dictionary reflecting the understanding of functional actions with the object, accompanying the child's visual and practical actions, manipulating it with real objects; (2) use in the speech of nouns and adjectives, describing the situational and essential characteristics of specific objects, distinguishing the stage of visual-figurative thinking; (3) logical-verbal formulas (a concept, a generalized word, a metaphor) that characterize the stage of logical-verbal thinking.

In our work we call the constructive-semantic characteristics of speech the features of judgments in explaining the meanings of objects and phenomena of the surrounding world. They have a tiered division, in accordance with the stages of the concept formation of the child: from understanding the functional purpose of objects (1), to the ability to distinguish and name the specific properties of objects in a particular situation (2), then the ability to distinguish the essential distinctive features of objects (3) and the ability to determine an object through the concept, correlating it with the generalizing feature (4) [2].

In modern works devoted to the development of child speech, generalized detailed descriptions of its rates, norms, possible deviations are presented [4, 5]. At the same time, there are conflicting points of view with respect to development factors [6]. J. Piaget considers speech a derivative of the stage of the intellect, which allows the child to express in speech constructs conceptual schemes that he has already learned [7]. In the works of D. Slobin [8], based on a comparison of the early speech of American, German, Russian, Samoan, Loya and Finnish children, a similar conclusion is drawn

about 'the existence of a great similarity of the basic vocabulary and the basic meaning transmitted by combinations of words' [8, p. 177].

S. Ervin-Tripp, T.G. Bever, E. Clark, and M. Bowerman in empirical studies show that the mastery of the language necessarily includes the processes of analysis, the classification of different subjects by common characteristics, etc. [6]. At the same time, O. Ekmekci [6] recorded the phenomenon of correction, simplification of speech by parents, talking with children in accordance with the level of development of his speech. Simplification of the speech of the parent can lead to a slowdown in the rate of the child's speech development.

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The purpose of the study is to reveal how the constructive and semantic characteristics of the speech of the mother affect the same indicators of the speech development of her child 6–7 years.

Empirical hypotheses of research are put forward: the higher the level of speech development of the mother, the higher the level of speech development of her child. If the mother is characterized by the use of the construct of 'concept' to explain the meanings of words, then the child will also use this construct.

2. Methodology

2.1. Sample

The study involved 30 baby-mother dyads: children aged 6.5–7.5 years; their mother at the age of 26–38 years. For all subjects, Russian is the language of everyday communication; level of education of mothers: 47% have higher education; 17% – incomplete higher education; 23% – secondary special; 13% – secondary education.

2.2. Materials and methods of research

To test the constructive and semantic characteristics of the speech of children and their mothers, the subtitle 'Vocabulary' of the Wechsler Intelligence Scale for Children

(WISC) methodology was used in adaptation of A.Yu. Panasyuk. The subtest is designed to identify the vocabulary, speech culture and thinking of children and adolescents aged 6.5–16.5 years. The subtest 'Vocabulary' has the highest correlation with the general verbal intelligence, its results are most resistant to external causes and after aging do not practically change with age [12]. According to the instruction, the test child should explain the meaning of each of the 30 words proposed, the test adult is each one of 40 words. The first 10 words refer to the common words of everyday use (for example, a spoon, a hat, etc.); second ten – words of average complexity (trouble, nonsense, people); the third group – words of a high degree of complexity, usually not used by children in everyday life (irony, dome, container).

Diagnostics of adults is usually carried out with the help of Wechsler Adult Intelligence Scale (WAIS) [12]. In our study, we offered mothers the same set of words as children. This allowed to fix those constructively-semantic characteristics of judgments in the explanation of the word, which the child most likely heard from the mother of the house.

At the first stage, children were examined. At the second stage – adults, which excluded the possibility of the mother preparing her child for testing.

Diagnosis is carried out in an individual form. The time of the task was not limited. The experimenter is not familiar with the hypothesis of the study, which eliminated the subjective influence on the procedure for performing the diagnosis and evaluating the results. All the answers were recorded, then an estimate was made and the frequency of use in the judgments of speech constructs was determined.

The traditional method for determining the level of speech development (SD) (assessment of the correctness of answers) is supplemented by indicators of constructive-semantic characteristics of judgments.

Indicators of constructive-semantic characteristics of speech: (1) situational description, a specific feature of the subject (for example, 'bus to go home', 'red bus') (Sit.); (2) functional description, actions with the subject ('bus on which we ride') (Act.); (3) use of important, main characteristics of the object (for example, 'the bus has wheels') (Charact.); (4) use of a concept that generalizes words ('bus is transport') or metaphors (for example, 'a nail is an umbrella for a mouse') (Concept).

Each word can be explained as one of the variants of interpretation, and several simultaneously. The number of each characteristic, the sum of all used speech constructs (the indicator 'speech activity' (SA)) was counted, the share of this or that characteristic in the total number of responses [13].

Table 1: Average group values of indicators of speech development children (*N* = 30) and mothers (*N* = 30).

Group	Metrics					
	SD	SA	Act	Sit	Charact.	Concept
Mothers	35.5	51.9	2.71	13.1	13.1	22.9
Children	20.1	43.5	11.5	3.9	17.6	10.5

The indicator 'Speech activity' (SA) characterizes the willingness of the subjects to respond monosyllabically or to give detailed answers, explaining the words-stimuli, offering several characteristics simultaneously.

To assess the significance of the influence of the mother's speech characteristics on the speech characteristics of her child, a correlation analysis was performed for the coupled samples using the Pearson correlation coefficient (r).

3. Results

3.1. Constructive and semantic characteristics of speech of children and mothers

Mother

Variance of the indicator Speech activity (SA) in the group was 44–74 constructs per 40 stimulus words. The priority constructive-semantic characteristic of judgments about the meaning of words is the 'concept' (an average of 22.9 constructs), which amounted to 45.0% of the total number of used constructs. Approximately a quarter of all answers were constructs 'specific situations' and 'significant characteristics'. Less commonly, the mothers used the construct 'action with the object' (2.7 constructs), 5.4% of all answers for the group, respectively, when explaining the words (Table 1).

Children

Spread of the indicator Speech activity (SA) in the group was 33–60 constructs per 30 word-stimuli. The priority constructive-semantic characteristic of judgments about the meaning of words is 'essential characteristics' (17.6 constructs), which is 40.4% of the total number of the named constructs. Approximately the same frequency used constructs 'action with the subject' (11.5) and 'concepts' (27.4 and 23.7%, respectively). Less often, children turned to the construct 'description of a specific situation' (3.9), 8.5%, respectively.

Table 2: Significant correlation coefficients between indicators of speech development of mothers and children*.

	Speech indicators of children's sample							
Mother	SA	Act	Sit	Char	Act 1	Sit 1	Char 1	Concept1
SD				−0.39*			−0.39*	
SA		−0.37*			−0.36*			0.57***
Act	0.36*		0.47**					
Sit		−0.45*			−0.38*			0.63***
Char		−0.45*		0.47**			0.47**	
Concept			0.47**			0.49**		
Act 1	0.36*		0.48**					
Sit 1		−0.40*			−0.38*			
Char 1			0.37*					
Concept1		0.38*	0.49**					0.61***

*Note: In the table, the sign * denotes the significance level α = 0.05, the sign ** denotes the significance level α = 0.01, the symbol *** denotes the significance level α = 0.001.

The result is quite natural and corresponds to the ideas of D. Wechsler [12] and L.S. Vygotsky [2] about the age features of the development of speech and thinking.

3.2. Relations indicators

The results of the correlation analysis are presented in Table 2. In Table 2 Act., Sit., Char., Concept – the number of constructs; Act. 1, Sit. 1, Char.1, Concept 1 – the proportion of the construct in the overall speech activity of SA.

The correlation analysis revealed a large number of significant links between the characteristics of speech of mothers and their children, while a significant correlation coefficient between the constructive-semantic characteristics of mother's speech and the level of the speech development index of her child evaluated in the experiment was not found.

Consider the revealed correlation links from the standpoint of the positive, developing or restraining influence of the mother on the child's speech.

Important indicators of the high level of the child's speech development is the use of the construct 'concept'. According to the WISC methodology, it is these answers that are evaluated as much as possible. It is highly appreciated that the child names the answers to the essential characteristics of objects.

The predominant use by the child of the construct 'concept' increases if, with a high speech activity of the mother (r = 0.573***), there is a tendency to give concept

definitions to the subjects (r = 0.609***), give examples with specific situations (r = 0.636**).

The child learns and uses in his speech to explain the meaning of words to their essential characteristics, if his mother does (r = 0.467**).

An unexpected negative correlation between the speech development of the mother and the child's ability to call the essential characteristics of the object (–0.392*) was revealed. This relationship requires explanation.

The more a mother says, the more she is inclined to give several different explanations to one thing, the less her child resorts to the most primitive way of explaining – through 'action with an object' and its functional purpose (–0.370*). To this method of explanation, the child resorts more often, the higher in the mother's speech the share of the construct 'concept' (0.383*).

The reduction in the proportion of the child's share and the amount of use of the 'act with object' construct inherent in an earlier age is associated with the mother's tendency to use for the explanation specific situations in which the subject can be observed (–0.451*), emphasizing the significant characteristics of the object (–0.447*).

3.3. Discussion

The revealed connections between the characteristics of the speech of the mother and her child speak for the benefit of those theories that confirm the influence of external factors on the development of speech [2, 14, 15], etc.

Of course, the impact has its limits, due to the mechanisms of the child's age development. No matter how the mother talks to the child, whatever constructs she uses in her speech, before the brain structures mature, the child will not be able to go to the stage of conceptual thinking

At the same time, it should be noted that the mother can more or less effectively create a 'zone of proximal development' for her child if she pays attention to her own way of introducing the child to the objects and phenomena of the surrounding world.

This is especially true for mothers with a high level of speech, and therefore, intellectual development. As D. Wechsler [12] points out in the description of the technique, answers that are of an emphatically intellectual nature (usually these are the answers-concepts) are often characteristic of demonstrative personalities. Premature conversation with the child only at the level of concepts rather hinders its speech development, than accelerates, if concepts are not supplemented by specific examples and essential characteristics. The 'transfer' to the child of the construct 'concept' in its finished form

does not form a true concept, it does not allow the child to notice the essential signs of objects.

Primitive, too simplistic mother's speech with a high proportion of the construct 'action with the subject' also reduces the child's speech activity.

The mechanism for the formation in the child of implicit concepts is the generalization of the specific examples and situations that the mother brings to her judgments. This pattern is manifested in the need to provide a child for its successful development of a wide range of different impressions, enriching the child's living environment. The obtained data indicate that the mechanism of verbal development and growth of speech activity is the speech interaction of an adult with a child, which ensures the transfer of the interpsychic into the intrapsychic one.

4. Conclusions

The constructive and semantic characteristics of mother speech influence the speech development of their children and can be considered as a factor in the zone of the nearest development of speech and verbal thinking of the child.

Described by L.S. Vygotsky, the mechanism of concept formation in a child through generalization of a certain number of situational descriptions and specific features was revealed in the mother-child speech interaction [2]. Primary use by the mother in explaining the meanings of the words of those judgments that include specific examples and situations in which the object indicated by this word occurs, contributes to the implicit formation in her child of the concept denoted by this word. The revealed regularity is typical for a child of six years

The small size of the sample dictates the need to view this study as a flight test, requiring additional research in the direction of increasing the sample and refining the statistical analysis data on a wider representative group. Another perspective of the study is the extension of the age range of children participating in the study. An interesting foreshortening of the study is the consideration of the constructive and semantic characteristics of the speech of the fathers as a factor in the verbal development of their children, as well as the joint influence of parents' speech on the development of the speech of their.

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